Notice of Allowability	Application No.	Applicant(s)	
	09/870,946	COOPER, DAVID L.	
	Examiner	Art Unit	
	Wilbert L. Starks, Jr.	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed 01/03/2006*.

2. ☒ The allowed claim(s) is/are *1-24*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Reasons For Allowance

1. Claims 1-24 are allowed.

2. The following is an Examiner's statement of reasons for allowance:

Interpretation: Applicant uses the phrase "...object of interest implantation on images..." Examiner interprets this phrase to mean creating what is known in the art as a "matte." Mattes are often used to create special effects and to manipulate images in this way. Therefore, Examiner also interprets claim elements 1(b), 9(b), and 18(b) to mean that Applicant is building a training data set by taking images and using mattes to insert features to the images that weren't there originally.

The cited prior art taken alone or in combination fails to teach the claimed invention of building a training data set by taking images and using mattes to insert features to the images that weren't there originally. Specifically, independent claims 1, 9, and 18 contain this feature.

The closest prior art of Nichani et al (U.S. Patent Number 5,673,334 A; dated September 30, 1997; class 382; subclass 143) teaches a method and apparatus for inspection of characteristics on non-rigid packages, but fails to teach or suggest building a training data set by taking images and using mattes to insert features to the images

that weren't there originally. To the extent that this feature is not present in the prior art of record, the present case is found to be allowable over the art of record.

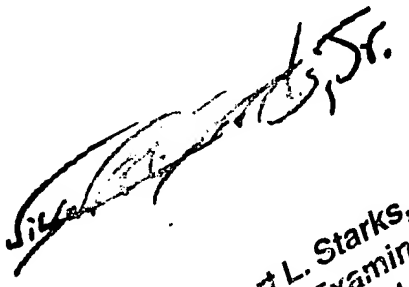
Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (571) 272-3691.

Alternatively, inquiries may be directed to the following:

S. P. E. David Vincent	**(571) 272-3080**
Official (FAX)	**(571) 273-8300**



Wilbert L. Starks, Jr.
Primary Examiner
Art Unit - 2121

WLS

16 April 2006

Examiner's Amendment

Please amend the claims as follows:

[Claim 1] 1. (currently amended): A computerized accelerated learning method for image-based decision system applications such as machine vision, non-contact gauging, inspection, robot guidance, medical imaging o accelerate learning maturity and enhance learning outcome comprises the following steps:

(a) input learning samples images;

(b) perform object of interest implantation on images using the learning samples images to generate simulated learning samples containing simulated objects of interest in the images;

(c) perform computerized algorithm learning using the input learning samples images and the simulated learning samples images.

[Claim 2] 2. (currently amended): The method of claim 1 wherein the object of interest implantation on images includes a texture mapping method extracting the defects from different products and mapping into normal images of the new product.

[Claim 3] 3. (currently amended): The method of claim 1 wherein the object of interest implantation on images uses geometry and intensity models defining the shape and pixel intensity of objects of interest.

[Claim 4] 4. (currently amended): The method of claim 1 wherein the object of interest implantation on images uses manual image editing of known good images to create negative or positive learning samples.

[Claim 5] 5. (currently amended): The method of claim 1 wherein the object of interest implantation on images uses a combination of methods selected from the set consisting of:

(a) texture mapping method extracting the defects from different products and mapping into normal images of the new product,

(b) geometry and intensity modeling defining the shape and pixel intensity of objects of interest, and

(c) manual image editing of known good images to create negative or positive learning samples.

[Claim 6] 6. (currently amended): The method of claim 1 wherein learning includes an computerized algorithm training process.

[Claim 7] 7. (currently amended): The method of claim 1 wherein the learning includes a computerized startup learning process.

[Claim 8] 8. (currently amended): The method of claim 3 wherein the geometry and intensity models use one or more image models selected from the set consisting of:

(a) image circle model,

(b) image donut model,

(c) image rectangle model,

(d) image spline curve model, and

(e) image comet model.

[Claim 9] 9. (currently amended): An accelerated computerized algorithm training method for image-based decision system applications such as machine vision, non-contact gauging, inspection, robot guidance, medical imaging to accelerate learning maturity and enhance learning outcome comprises the following steps:

(a) input learning samples images;

(b) perform object of interest implantation on imams using the learning samples to generate simulated learning samples containing simulated objects of interest in the images;

(c) perform computerized algorithm training using the learning samples images and the simulated learning samples images.

[Claim 10] 10. (currently amended): The method of claim 9 wherein the object of interest implantation on images includes a texture mapping method extracting the defects from different products and mapping into normal images of the new product.

[Claim 11] 11. (currently amended): The method of claim 9 wherein the object of interest implantation on images uses geometry and intensity models defining the shape and pixel intensity of objects of interest.

[Claim 12] 12. (currently amended): The method of claim 9 wherein the object of interest implantation on images uses manual image editing of known good images to create negative or positive learning samples.

[Claim 13] 13. (currently amended): The method of claim 9 wherein the object of interest implantation on images uses a combination of methods selected from the set consisting of:

(a) texture mapping method extracting the defects from different products and mapping into normal images of the new product,

(b) geometry and intensity modeling defining the shape and pixel intensity of objects of interest, and

(c) manual image editing of known good images to create negative or positive learning samples.

[Claim 14] 14. (currently amended): The method of claim 9 wherein the computerized algorithm training further comprises:

[[1.]] (a) input additional learning sample images following initial computerized algorithm training;

[[2.]] (b) perform test using the additional learning samples images and adjustment to achieve the performance goals, and

[[3.]] (c) output a general computerized algorithm including algorithm architecture and default parameters.

[Claim 15] 15. (currently amended): The method of claim 11 wherein the geometry and intensity models use at least one image model selected from the set consisting of:

(a) image circle model,

(b) image donut model,

(c) image rectangle model,

(d) image spline curve model, and

(e) image comet model.

[Claim 16] 16. (currently amended): The method of claim 14 further comprising input performance goals and expected tolerances for the computerized applications.

[Claim 17] 17. (currently amended): The method of claim 9 wherein the object of interest implantation on images comprises:

(a) input expected computer application tolerances;

(b) output initial simulated learning samples images using initial learning sample images and expected computer application tolerances;

(c) input additional learning samples-images;

(d) output additional simulated learning samples images using the additional learning sample images and expected computer application tolerances.

[Claim 18] 18. (currently amended): A computerized accelerated start-up learning method for image-based decision system applications such as machine vision, non-contact gauging, inspection, robot guidance, medical imaging to accelerate learning maturity and enhance learning outcome comprising:

(a) input start-up learning sample images;

(b) perform object of interest implantation on images using the start-up learning sample images to generate simulated learning samples containing simulated objects of interest in the images;

(c) perform computerized start-up learning on a general computerized algorithm using the input start-up learning samples images and the simulated learning samples-images.

[Claim 19] 19. (currently amended): The method of claim 18 wherein the object of interest implantation on images comprises a texture mapping method extracting the defects from different products and mapping into normal images of the new product.

[Claim 20] 20. (currently amended): The method of claim 18 wherein the object of interest implantation on images uses at least one geometry and intensity model defining the shape and pixel intensity of objects of interest.

[Claim 21] 21. (currently amended): The method of claim 18 wherein the simulated learning sample images simulate defective samples images.

[Claim 22] 22. (currently amended): The method of claim 18 wherein the object of interest implantation on images uses a combination of methods selected from the set consisting of:

(a) texture mapping method extracting the defects from different products and mapping into normal images of the new product,

(b) geometry and intensity modeling defining the shape and pixel intensity of objects of interest, and

(c) manual image editing of known good images to create negative or positive learning samples.

[Claim 23] 23. (currently amended): The method of claim 18 wherein the computerized startup learning further comprises:

(a) input at least one start-up learning samples images;

(b) input a computerized general algorithm;

(c) output an application specific computerized algorithm using the at least one start-up learning samples images;

(d) perform automatic computerized adjustment using simulated learning samples images to generate an application specific computerized algorithm.

[Claim 24] 24. (currently amended): The method of claim 20 wherein the geometry and intensity models use at least one image model selected from the set consisting of

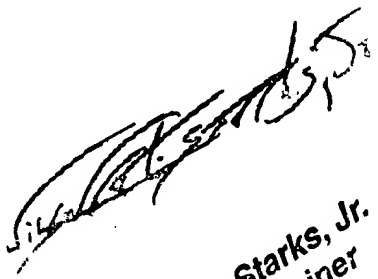
(a) image circle model,

(b) image donut model,

(c) image rectangle model,

(d) image spline curve model, and

(e) image comet model.



Wilbert L. Starks, Jr.
Primary Examiner
Art Unit 2121